

configured to convert current outputted from the zero-phase current transformer to voltage;

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contd
a controller configured to determine based on the voltage of the detection resistor whether an electric leak occurs and configured to open the switch when the controller determines that an electric leak occurs; and

at least one filter provided between the detection resistor and the controller and configured to remove high frequency elements in the voltage of the resistor, the at least one filter comprising:

an input side resistor connected in series to the controller and configured to limit current input to the controller; and

a capacitor connected in parallel to the controller,

wherein the ground fault interrupter does not include a clipping circuit between the zero-phase current transformer and the controller.

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7. (Amended) A ground fault interrupter according to Claim 5, wherein the at least one filter is configured to cut current having a frequency higher than a frequency of the alternating-current electric source.

11. (Amended) A ground fault interrupter, comprising:

a switch provided in electric lines connecting an electric power source and an electric load;

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a zero-phase current transformer configured to detect unbalanced current flowing in the electric lines;

a detection resistor connected in parallel to the zero-phase current transformer and configured to convert current outputted from the zero-phase current transformer to voltage;

a controller configured to open the switch when an electric leak is detected based on the voltage of the detection resistor; and

at least one filter provided between the detection resistor and the controller and configured to remove high frequency elements in the voltage of the resistor, the at least one filter comprising:

an input side resistor connected in series to the controller and configured to limit current input to the controller; and

a capacitor connected in parallel to the controller,

wherein the ground fault interrupter does not include a clipping circuit between the zero-phase current transformer and the controller.

12. (Amended) A ground fault interrupter, comprising:

a switch provided in electric lines connecting an electric power source and an electric load;

zero-phase current transforming means for detecting unbalanced current flowing in the electric lines;

detection means for converting current outputted from the zero-phase current transforming means to voltage, the detection means being connected in parallel to the zero-phase current transforming means;

controlling means for determining based on the voltage of the detection means whether an electric leak occurs and for opening the switch when the controlling means determines that an electric leak occurs; and

at least one filter means for removing high frequency elements in the voltage of the detection means and provided between the detection means and the controlling means, the at least one filter means comprising:

an input side resistor connected in series to the controlling means and configured to limit current input to the controlling means; and

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a capacitor connected in parallel to the controlling means,
wherein the ground fault interrupter does not include a clipping circuit between the
zero-phase current transforming means and the controlling means.

Please add new Claim 13 as follows:

13. (New) A ground fault interrupter, comprising:

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a switch provided in electric lines connecting an electric power source and an electric
load;

a zero-phase current transformer configured to detect unbalanced current flowing in
the electric lines;

a detection resistor connected in parallel to the zero-phase current transformer and
configured to convert current outputted from the zero-phase current transformer to voltage;

a controller configured to determine based on the voltage of the detection resistor
whether an electric leak occurs and configured to open the switch when the controller
determines that an electric leak occurs;

at least one filter provided between the detection resistor and the controller and
configured to remove high frequency elements in the voltage of the resistor, the at least one
filter comprising:

an input side resistor connected in series to the controller and configured to
limit current input to the controller; and

a capacitor connected in parallel to the controller;

an additional current transformer configured to detect grounding; and

an alternating-current electric source configured to supply current to the additional
current transformer to energize the additional current transformer, the alternating-current